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SYMPOSIUM ON THE CONTROL AND ERADICATION OF TUBERCULOSIS

AUG 1993

THE LENOX HOTEL
BOSTON, MASSACHUSETTS
NOVEMBER 27-30, 1979

Sponsored by
The Massachusetts Department of Public Health, and
The Center for Disease Control (DHEW)
in cooperation with
The Massachusetts Health Officers Association

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SYMPOSIUM ON THE CONTROL AND ERADICATION OF TUBERCULOSIS

The Lenox Hotel, Boston, Massachusetts
November 27-30, 1979

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May 12, 1980

Alfred L. Frechette, M.D.
Commissioner of Public Health
Massachusetts Department of Public Health
600 Washington Street
Boston, Massachusetts 02111

Dear Dr. Frechette:

On behalf of the participants, we are pleased to present to you this Report of the Symposium on the Control and Eradication of Tuberculosis, held at the Lenox Hotel, Boston, Massachusetts, November 27-30, 1979.

The Symposium was made up of persons with experience in Tuberculosis Control from official, non-official, and educational institutions around the Nation, assisted by support staff from the Massachusetts Department of Public Health, Massachusetts Health Officers Association, and the Center for Disease Control. Over a four-day period the membership conducted a thorough study of the many aspects of the disease and its effect on the Commonwealth of Massachusetts. The resulting report recommends the setting of a new goal for the control and eradication of tuberculosis in Massachusetts, and defines a series of objectives and strategies necessary to achieve this goal.

We recognize that, while the preparation of this report is an important step for Massachusetts, the more important part, the implementation of the findings, is yet to come. We are confident, however, that the Commonwealth of Massachusetts can and will make effective use of this document in its plan for the elimination of this disease as a public health problem. Furthermore, we believe that, because of the similarity of the tuberculosis control problem in other states, the report could also have broad application elsewhere. It is our hope that other state and local health departments will be stimulated to assess their tuberculosis control programs, and use the work of this group as a model.

Respectfully submitted,

Thomas J. Kearns
Chairman

Paul T. Davidson, M.D.
Moderator

Laurence S. Farer, M.D.
Co-Chairman

REPORT TO THE COMMISSIONER OF HEALTH
COMMONWEALTH OF MASSACHUSETTS
BY THE
SYMPOSIUM ON THE CONTROL AND ERADICATION OF TUBERCULOSIS

Lenox Hotel, Boston, Massachusetts
November 30, 1979

INTRODUCTION

Tuberculosis still occurs in the Commonwealth of Massachusetts as an important public health problem, as evidenced by the 580 cases of disease reported in 1978. Transmission continues, as indicated by the occurrence of 64 cases of tuberculosis in children and young adults in 1978. Deaths from tuberculosis are reported each year: 50 in 1977. Tuberculosis occurs unevenly throughout the Commonwealth, but no region is free of the disease. The number of cases is appreciably higher in urban areas and in certain population groups.

Highly effective programs to attack the disease problem have been provided by the Department of Public Health over the years, but new strategies are needed now to accelerate the decline of tuberculosis. The Department is concerned about the potential dangers of complacency, and the lack of concern and support by the public and the health care delivery system in reducing the personal and public health burden of tuberculosis. With tuberculosis now localized in urban areas of Massachusetts, the intensified application of available technology is needed to reduce the incidence of tuberculosis.

As a consequence, the Massachusetts Department of Public Health and the Center for Disease Control of the United States Department of Health, Education, and Welfare, in cooperation with the Massachusetts Health Officers Association, convened a Symposium on the Control and Eradication of Tuberculosis. The participants, recognized nationally as experts in tuberculosis, were asked to examine the fundamental concepts and basic issues in the control and eradication of tuberculosis and to develop goals, objectives, and new strategies for the Commonwealth of Massachusetts which can serve as a model for other states.

This report is the result of the deliberations of the Symposium. The participants believe recommendations for Massachusetts should have broad application because of the similarity of tuberculosis control problems among state and local health departments. The participants hope that other areas will be stimulated to assess thoroughly their control programs to be sure that essential components of disease surveillance, containment, and assessment are available in their tuberculosis programs.

RECOMMENDATIONS

Total eradication of tuberculosis remains a very long-term goal. Certain geographic, ethnic, and socioeconomic groups, on the other hand, are already free of tuberculosis and an expansion of these groups is possible. The Symposium believes that a more specific target can be established, and recommends the following goal:

GOAL

The goal of the Division of Tuberculosis Control should be:
the interruption of transmission of tuberculosis infection;
the prevention of tuberculosis infection from progressing to disease; and
the protection of non-infected individuals from becoming infected.

OBJECTIVES AND STRATEGIES

Twelve objectives and forty-two strategies to meet the foregoing goal are organized under the three broad categories of:

I. **Surveillance** (identifying all cases of disease and infection)
II. **Containment** (ensuring the necessary care and treatment for those diseased, infected, and exposed to infection)
III. **Program Management and Assessment** (reviewing the progress toward achieving the goals and objectives, and revising programs to meet new needs or to become more effective).

I. SURVEILLANCE

The two components of tuberculosis surveillance are finding the cases, and knowing about the cases that have been found. To prevent transmission of the tubercle bacilli to others, the Department of Public Health must know of all cases in the community.

Objective 1

Make all cases of tuberculosis known to the Health Department as soon as they are detected.

Strategies:

a. Require all laboratories performing mycobacterial examinations to report positive findings giving any evidence of tuberculosis.

b. Inform physicians and hospital infection control personnel of the tuberculosis problem and of the need for rapid and complete reporting. This should be done in cooperation with professional associations through educational programs.

c. Explore, on a trial basis, the reporting by pharmacists and other health workers the identity of patients receiving anti-tuberculosis drugs.

d. Provide for toll-free telephone reporting of cases by physicians directly to the Division of Tuberculosis Control Case Registry to be followed by written confirmation to the reporting physicians and the appropriate local health department.

e. Use other sources who might know about cases of tuberculosis, such as Professional Standards Review Organizations, Health System Agencies, third-party payers, and medical records and infection control personnel.

Objective 2

Identify and evaluate, within seven days of case reporting, all close contacts of a newly identified case of tuberculosis and provide necessary treatment.

Strategies:

a. Monitor the contact examination programs within the Division of Tuberculosis Control on a continuous basis.

b. Provide training to medical and health professionals in the methods of identifying, locating, examining, and treating tuberculosis contacts.

Objective 3

Screen groups in the general population where screening has been found useful in detecting infection and disease, or in preventing infection, with special consideration given to immigrants from areas of high tuberculosis prevalence.

Strategies:

a. Examine, by tuberculin test and/or chest x-ray, all known newly arriving immigrants within a month after arrival in Massachusetts.

b. Establish a cooperative program with colleges and universities to ensure that screening of foreign students for tuberculosis is accomplished.

c. Continue and expand the system, utilizing the present Federal immigrant notification procedures (Class A and Class B patients) in identifying and locating new immigrants.

d. Ensure that each hospital has an employee tuberculosis surveillance program that is based upon the dimension of the tuberculosis problem in the community.

e. Review existing data on such groups as school, nursing home, and day care center personnel, at appropriate intervals, to determine the value of required screening.

f. Survey by tuberculin skin testing other groups, such as prisoners or residents in institutions, to obtain data about the prevalence of tuberculous infection, and to determine the need for periodic screening.

II. CONTAINMENT

Principles and techniques for the recognition, management, and prevention of tuberculous infection and disease have been well established. The following objectives and strategies will help ensure that transmission of tuberculosis is interrupted.

Objective 1

Render infectious persons noninfectious within six months after starting chemotherapy.

Strategies:

a. Treat all newly recognized patients with tuberculosis disease with two or more antituberculosis drugs to which their organisms are susceptible.

b. Develop a statewide comprehensive system for detecting and monitoring primary and acquired drug resistance to ensure that appropriate therapy is being received.

c. Provide accessible and acceptable diagnostic and treatment services and facilities for all patients.

d. Utilize, where appropriate, treatment programs which improve the chances of patient compliance, such as short-course chemotherapy and intermittent and supervised therapy.

e. Identify source cases and determine the drug susceptibility pattern of the organism when tuberculosis infection or disease is discovered in children.

f. Contact, within two weeks following discharge, at least 85 percent of patients who were hospitalized for tuberculosis, to ensure continuity of care.

g. Examine within two weeks at least 95 percent of persons termed "urgent suspects" (potential transmitters of infection) to establish a diagnosis and initiate chemotherapy if indicated; examine within one month 85 percent of other suspects and establish a diagnosis within three months.

h. Reevaluate medically patients with negative bacteriology to determine the continued need for chemotherapy.

Objective 2

Provide health care personnel with the proper knowledge and tools so that the appropriate diagnostic, therapeutic, and preventive measures for containing tuberculosis will result.

Strategies:

a. Implement educational programs for persons who are, or should be, concerned with tuberculosis control, such as physicians, infectious control nurses, epidemiologists, and laboratory workers, with particular emphasis among those serving areas of higher incidence of infection and disease.

b. Develop, through the use of various communications media, programs that provide continuing education, with C.E.U. credits, for physicians and nurses.

c. Provide appropriate consultations to physicians via toll-free telephone lines.

Objective 3

Provide information for each patient which results in an understanding of his/her condition and a willingness to receive uninterrupted treatment and preventive therapy.

Strategies:

a. Provide patient education utilizing verbal, audio-visual, and printed information in the patient's dominant language and reflecting an understanding of his/her lifestyle. It will be directed toward informing the patient about the personal and public health implications of tuberculosis, and emphasizing the importance of completing the prescribed regimen of treatment.

b. Furnish these materials to health care providers for distribution, and as a reminder of the need for ongoing educational efforts, at each patient encounter.

Objective 4

Prevent persons infected with tuberculosis from developing disease.

Strategy:

Implement the 1974 American Lung Association/American Thoracic Society-Center for Disease Control specific recommendations for the use of isoniazid for preventing progressive tuberculosis from developing among infected persons.

The Symposium participants concur with the 1974 recommendations which outlined the following groups in order of priority for preventive therapy:

(1) Household members and other close associates of persons with recently diagnosed tuberculosis disease.

(2) Positive tuberculin skin test reactors with findings on the chest roentgenogram consistent with nonprogressive tuberculous disease, in whom there are neither positive bacteriologic findings nor a history of adequate chemotherapy.

(3) Newly infected persons.

(4) Positive tuberculin skin test reactors in special clinical situations.

(5) Other positive tuberculin skin test reactors.

Objective 5

Prevent persons who are not infected with tuberculosis from becoming infected.

Achievement of the other containment objectives will ensure the success of this objective. The Symposium participants recognize the inherent difficulties in implementing all the strategies recommended, but believe they will be essential to the accomplishment of control and eradication of tuberculosis.

III. PROGRAM MANAGEMENT AND ASSESSMENT

The resources available to support effective programs must be adequate or the achievement of the objectives set for tuberculosis control will not become a reality. To determine the effectiveness of the recommended control strategies, tuberculosis control personnel must periodically evaluate them to measure the degree of success in meeting their intended objectives. The following objectives and strategies are recommended as guidance to help ensure that adequate resources are available and that program evaluation does measure results.

Objective 1

Provide an allocation of funds for tuberculosis control in sufficient amounts for the operation of basic program components.

Strategies:

a. Report to and review with the State Legislature, at least annually, the current and ongoing operational needs of the tuberculosis control program, including the incidence and prevalence of tuberculosis in various communities and high risk groups.

b. Continue the use of currently available Federal funds for tuberculosis control.

c. Transfer funds that are no longer needed in one area, such as hospitalization, to other areas of need in tuberculosis control, such as special outreach programs for non-compliant patients.

d. Continue to enlist the support of the local affiliates of the American Lung Association and other organizations as advocates in the maintenance of sufficient funding.

e. Provide for the ongoing funding of the essential public health components of the tuberculosis control program not available elsewhere, such as data collection, epidemiological analysis, special treatment programs, and administrative services in the event that new nationwide health care systems are adopted.

Objective 2

Organize the Division of Tuberculosis Control to facilitate the most effective use of available resources and to provide for effective programs, administration, and assessment.

Strategies:

a. Maintain an adequately staffed centralized unit to develop policies and programs, and to facilitate and coordinate all the tuberculosis control programs and activities throughout the State.

b. Review regularly the organizational structure and the coordinating elements among all the various agencies, institutions, and organizations involved in tuberculosis control and adjust as needed.

c. Develop, facilitate, and implement through the centralized organization coordinated policies, program activities, and resource support that are adapted to the needs of the various regions or population groups.

Objective 3

Develop a well-trained and effective staff in the Division of Tuberculosis Control.

a. Determine which program problems can be improved by staff training, and provide and coordinate proper orientation and education to meet the needs.

b. Match the role, function, training, and job classification of tuberculosis control personnel to the skill level required for controlling tuberculosis in the various populations being served.

Objective 4

Provide timely, accurate, and easily accessible program management information through the data systems of the Division of Tuberculosis Control.

Strategies:

a. Expand, centralize, and automate part or all of the current Tuberculosis Case Register to provide regular in-depth analyses of the extent of the tuberculosis problem.

b. Utilize, for program management purposes, the Center for Disease Control statistical and program performance reports and submit such reports to the Center on a timely basis.

These include:

Annual Tuberculosis Statistical Summary

Case Register

Contact and Other Infected Persons Under Supervision

Index of Bacteriologic Conversion of Sputum

Index of Continuity of Therapy

Index of Completion of Preventive Treatment

c. Monitor continuously the proper identification and examination of tuberculosis contacts.

d. Review continuously the results of detecting and monitoring cases with primary and acquired drug resistance.

e. Review frequently data on patients in special interest categories such as those with positive sputum bacteriology, drug resistant organisms, and individually supervised therapy programs.

f. Establish the following performance standards and review data to ensure that all objectives are being met or exceeded:

75 percent of all positive-sputum patients shall have converted to negative by three months, and 95 percent by six months.

95 percent of all patients with disease shall have completed a program of therapy within the prescribed time and be discharged when supervision is no longer required.

High risk contacts shall be identified and:

95 percent shall be examined.

95 percent of infected close contacts under age 15 shall be on preventive therapy.

75 percent of infected close contacts over age 15 shall be on preventive therapy.

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APPENDIX A

COMPONENTS OF A MODERN TUBERCULOSIS CONTROL PROGRAM

Matthew O. Locks, M.D., F.A.C.P.
Director of Tuberculosis Control, County of Los Angeles, California

The presence of tuberculosis within a community reflects a continuing cycle in the pathogenesis of this ancient disease. Undetected tuberculosis infection progresses to unrecognized pulmonary tuberculosis. With the appearance of large numbers of tubercle bacilli within the pulmonary secretions and the onset of repetitive coughing, infectious droplet nuclei are aerosolized into the environmental air. Previously uninfected individuals, sharing the contaminated environmental air, inhale an infectious droplet containing tubercle bacillus, and in turn, develop tuberculosis infection. Permitting this cycle of infection, disease, and transmission of infection to continue, represents the failure to control tuberculosis within that community.

Currently available therapeutic agents and techniques can cure tuberculosis disease. Similarly, therapeutic agents can prevent the progression of tuberculosis infection to tuberculosis disease, and in addition, they can protect the non-infected individual from acquiring tuberculosis infection. A modern tuberculosis control program can be designed to utilize these therapeutic agents and techniques efficiently and effectively and, by making them available whenever and wherever they are required within the community, the subsequent transmission of tuberculosis infection can be significantly reduced and ultimately eliminated.

In order to design an effective tuberculosis control program, it is essential to develop a data base which accurately defines the tuberculosis problem within the population being served. This aspect of tuberculosis control; namely, surveillance, provides information about patients with tuberculosis who are already recognized and under treatment in the public and private sectors. The surveillance effort is also concerned with the geographic and demographic data which helped to define the full extent of tuberculosis infection within the community. This is revealed by selectively screening segments of the population for tuberculosis infection in areas of the community with a high incidence of tuberculosis disease. By providing ongoing information regarding the geographic and demographic distribution of tuberculosis in the community, a basis is developed for optimal program planning in the future. This requires an aggressive, ongoing mechanism which not only searches for and identifies individuals with tuberculosis already present within its jurisdiction, but also recognizes sources of tuberculosis infection and disease which newly enter into the health care system. Essential to this purpose is the maintenance of astute, professional vigilance which quickly detects individuals with tuberculosis disease who are seeking medical care primarily for the signs and symptoms of tuberculosis, particularly those of respiratory origin. Of equal importance is the need to recognize the presence of tuberculosis as an associated medical problem amongst individuals who are seeking health care for a multiplicity of other medical problems. In addition, the surveillance process must include an aggressive tuberculosis screening program which is directed to those segments of the community wherein tuberculosis infection and disease flourish. In an urban community, the target populations of the screening effort should include the inner city residents, the native-born aging population, and of particular import, the foreign-born persons who have emigrated from areas of the world where tuberculosis infection and disease are highly prevalent. Since tuberculosis is still a disease of the poor, a continuing search for tuberculosis must be directed among the socially and economically disadvantaged individuals within the community.

Techniques for tuberculosis screening will vary, dependent upon the demographic and geographic characteristics of the population being evaluated. Screening for tuberculosis infection is best accomplished by tuberculin skin testing, utilizing the Mantoux technique. Data regarding the presence of tuberculosis disease is obtained from patient interviews, medical records, chest x-rays, and the results of mycobacterial cultures. Classification of tuberculosis infection and disease according to current diagnostic standards will permit the development of non-ambiguous data from which tuberculosis control program needs can be recognized. In addition to the information derived from public health programs which provide the major share of medical care for tuberculosis patients, surveillance information must be obtained from health care providers in the private sector, infection control personnel in community hospitals, laboratories which provide mycobacteriology services, and pharmacies which dispense antituberculosis drugs. Information from all of these sources will provide meaningful data regarding tuberculosis patients who are under treatment in the community at that time.

Another important component of the tuberculosis control program is its responsibility to ensure the availability and utilization of appropriate therapeutic agents and techniques in the management of individuals with tuberculosis. This function, namely, containment, describes the overall effort to reduce or eliminate the transmission of tuberculosis infection within the community. The containment effort is directed to four subsets of individuals who require tuberculosis control services:

1. Individuals with tuberculosis disease who are potential transmitters of tuberculosis infection. These patients must be recognized in a timely fashion and rendered non-communicable and non-infectious as rapidly as possible.
2. Intimate associates or contacts of patients with communicable tuberculosis must be identified, evaluated, and treated, as needed, for either tuberculosis infection or disease.

3. (a) Individuals with tuberculosis disease, currently bacteriologically negative, and (b) individuals with tuberculosis infection — neither group previously treated with standard antituberculosis therapy. In each instance, therapeutic measures are required to prevent the progression of either tuberculosis infection or disease to communicable tuberculosis disease.
4. Individuals exposed to sources of tuberculosis infection but are currently noninfected. Protection of these individuals from acquiring tuberculosis infection is required.

Successful therapeutic agents and techniques are available to reduce or eliminate the transmission of tuberculosis infection for all individuals with either tuberculosis infection or disease. For the patient with tuberculosis disease who is infectious and a potential transmitter of tuberculosis infection to others, the containment effort embodies several basic principles. Specific antituberculosis chemotherapy which includes a combination of at least two effective antituberculosis drugs must be instituted promptly. Control of aerosolized pulmonary secretions associated with coughing must be practiced; education of each patient as to the need for covering his cough with sputum tissues is essential. Antituberculosis chemotherapy and pulmonary secretions control effectively reduce the transmission of tuberculosis infection by halting the contamination of environmental air. A major strategy of the containment process is the initiation and maintenance of a tuberculosis educational program directed to the patient, his family, and the community. Emphasis on the personal and public health aspects of tuberculosis disease, the need for contact investigation and management, and the need for continued, uninterrupted antituberculosis chemotherapy are essential components of this educational effort. Appropriate supervision by means of clinical and bacteriological monitoring is essential for the successful outcome in the management of the tuberculosis patient. This includes a continuing awareness of potential adverse reactions which may result from the antituberculosis medications.

For those individuals with bacteriologically negative tuberculosis disease and those with tuberculosis infection, neither of whom having received previous specific antituberculosis therapy, the administration of Isoniazid will prevent the future development of communicable tuberculosis disease. Patient education and supervision are also essential to ensure cooperation in drug-taking and monitoring for potential adverse reactions to Isoniazid. The administration of BCG vaccine for protection against tuberculosis infection and disease is not recommended in a modern containment effort. BCG vaccine does not provide protection against naturally acquired airborne tuberculosis infection, nor does it protect against the progression of tuberculosis infection to tuberculosis disease. Indeed, when formulating decisions in the current management of individuals with tuberculosis infection or disease, a history of previous BCG vaccination should be disregarded, and recommendations should be based on currently available objective surveillance data.

As part of the containment process, it is essential to provide accessible and appropriate resources to implement the containment effort. This includes a cadre of health care personnel who are informed in the current concepts of recognition, management, and prevention of tuberculosis. The health care providers must be sensitive to the personal needs of the population being served. This includes an ability to communicate in the patient's dominant language, to fully comprehend the patient's lifestyle, and to be aware of his personal and cultural needs. In providing the various categories of personnel that will meet the varied needs of patients with tuberculosis, it is also essential that each individual providing these services will be performing in an efficient and effective manner in keeping with his training and experience.

In providing available and accessible resources in the containment effort, ambulatory care services must be emphasized. In-patient hospital care should be available for those patients requiring medical services which cannot be otherwise provided in the ambulatory care setting. A responsible and reliable laboratory support service is also essential to a modern tuberculosis control program. Basic laboratory services should include the identification of mycobacterial species, drug susceptibility studies, and other laboratory studies which aid in monitoring the patients, when needed, for adverse drug reactions. Since many decisions in the management of tuberculosis patients are dependent on laboratory findings, the report of laboratory test results should be available to the clinician in a timely fashion. Other resources, including psycho-social services and consultative medical services should be available. Another component of the containment effort is an enforcement service to assist in the management of the non-cooperative patient. Supporting all these services and resources is the need for appropriate funding by means of an identifiable budget for tuberculosis control. Allocations within this budget must be directed according to tuberculosis control program priorities.

A modern tuberculosis control program must also have an excellent medical records and communication system. It is essential that information be transferred between all the components of the tuberculosis control program in a timely fashion. It is also necessary to communicate and relate to other public and private agencies. Integration and communication between the tuberculosis control program and the private sector is needed to maintain an adequate surveillance and containment function for patients under private care. It is also necessary to relate to other community programs as well as voluntary agencies. In many communities, the affiliates of the American Lung Association can provide excellent support to professional and public education, legislative action, and community support for the tuberculosis control program.

In keeping with the need for an ongoing evaluation of the surveillance and containment efforts of the modern tuberculosis control program, it is essential to establish a quality assurance plan which clearly defines the standards, objectives, and goals of the tuberculosis control program. The criteria which are established within the quality assurance plan must apply realistically to the community being served. The objectives and goals should be achievable in a timely manner. Included therein will be a mechanism which monitors the data derived from the surveillance and containment efforts of the tuberculosis program and assesses the clinical performance of the professional staff as well as the quality of patient care. As a result of the evaluation mechanism, problems in clinical performance and patient care will be recognized and resolved in a timely fashion by means of program changes which address the ongoing needs of tuberculosis control in the community.

By means of these efforts, it should be possible to achieve a realistic goal in the coming decade; namely, a reduction and eventual elimination of the transmission of new tuberculosis infection in the community. The ultimate eradication of tuberculosis as a human medical problem can then be achieved.

APPENDIX B

TUBERCULOSIS CONTROL, 1959 TO 1979, FROM THE MASSACHUSETTS PERSPECTIVE

Thomas J. Kearns, Director, Division of Tuberculosis Control
Massachusetts Department of Public Health

In the past two decades, 1959 to 1979, we have seen a substantial decline in tuberculosis morbidity and mortality; brought about, at least in part, by public health programs for the prevention, treatment, and surveillance of tuberculosis. At the same time, we have seen concern turn into apathy as the tuberculosis control movement has come almost to a halt. Yet, tuberculosis continues to be a sizable problem and a costly drain on the scarce public health dollar in Massachusetts and at least half of our states. Moreover, the transmission of new infection among the young and the immigrant, particularly in the urban areas, indicates that without prompt new strategies the tuberculosis problem may be carried well into the next century.

No broad national review of tuberculosis has occurred since the Arden House Conference on Tuberculosis convened twenty years ago. At that time, nineteen participants, leaders in public health and tuberculosis control, set a long-range national goal for the eradication of tuberculosis in the United States. The conferees made eleven other recommendations which dealt with such questions as research, finances, and performance standards for strengthening tuberculosis control programs.

The 1959 Arden House Conference set the stage for major changes in the control of tuberculosis. On the basis of the recommendations of the Conference, the following intermediate goals were established by a committee appointed by the United States Public Health Service:

> **For the country as a whole, a new active case rate of not more than 10 per 100,000 population by 1970; and for the community, control of the spread of infection to the point where not more than one percent of the 14-year-olds react to tuberculin.**

Following, and as a result of this Conference; new legislation, regulations, and policies to update tuberculosis programs were passed in many states and large cities.

In Massachusetts, the Department of Public Health conducted an exhaustive study of the problem and available resources. Doctors Weidman and Hitson prepared a report called, ‘‘On the Need for Change.’’ The report called for a complete reorganization of tuberculosis control in the Commonwealth, a consolidation of the eighteen existing sanatoria, and a projected five million dollar saving. On the strength of this report and other studies showing rising sanatoria costs as patient census declined, the Massachusetts Legislature enacted into law Chapter 608, Acts of 1961, An Act to Reorganize Tuberculosis Control in the Commonwealth.

Chapter 608, Acts of 1961, ended a three-way responsibility for tuberculosis control that had evolved over half a century between the State, counties, and local boards of health. This Act placed responsibility within the Massachusetts Department of Public Health, for the control and eradication of tuberculosis in the Commonwealth. The Division of Tuberculosis Control's budget was increased from $300,000 to $5,000,000 with this Act, to provide for the contracting for care and treatment of all patients with diagnosed or suspected tuberculosis. The Division began to plan for the consolidation of all tubercular patients in eighteen sanatoria into five sanatoria: Middlesex, Norfolk, and Worcester County Sanatoria; Mattapan Sanatorium; and Westfield Sanatorium which were to continue for tuberculosis treatment. Medical audits were conducted in all sanatoria to determine which patients could be discharged and which patients would require transfer to one of the five remaining institutions. There was a total of some twenty-four hundred patients in the eighteen sanatoria before consolidation. On January 1, 1963, the effective date of the consolidation, the census in the five sanatoria numbered only eight hundred and seventy-five patients. Already, the five sanatoria were operating at less than a full census.

The very act of consolidation resulted in a saving of almost the full five million dollars in tuberculosis costs. The savings were due to a reduction in the number of patients eligible for treatment as audited, bona fide tuberculosis cases, and as a result of closing of three of the sanatoria. The real savings, however, did not total five million; as most of the other non-contract sanatoria remained open for chronic disease and other care.

Beginning in 1963, the Division of Tuberculosis Control, in cooperation with local boards of health and community hospitals, began to develop an out-patient structure for ambulatory follow-up care of patients discharged from tuberculosis sanatoria. The Division began the phase-out of board of health screening and follow-up programs which used a portable x-ray machine to examine patients and reported back to a distant sanatorium. These programs were replaced by contract tuberculosis clinics, offering a full range of diagnostic and ambulatory treatment services, in selected general hospitals serving a designated geographic area. The clinics were staffed by a clinician experienced in tuberculosis treatment, together with a local Public Health nurse and clerk, and augmented by the hospital's staff and consultants.

The Division also began the development of a statewide laboratory system to process specimens from tuberculosis clinics and those formerly examined in sanatoria no longer willing, or able, to provide such services. Some sixteen laboratories in sanatoria, hospitals, and boards of health were initially selected to be included in the system. The laboratories provided one to three levels of mycobacteriological services, with only the Mattapan Hospital Laboratory and the State Diagnostic Laboratory providing drug susceptibility testing on all tuberculosis drugs. Within a few years, all State-supported mycobacteriological services were consolidated at the Mycobacteria Reference Laboratory at Mattapan Hospital.

As facilities and local expertise were developed, Division policy required shorter hospitalization and earlier return of patients to the community. Over the next five years, the average length of hospitalization of a tubercular patient in one of the five contract sanatoria was reduced from almost six months to less than three months, with the balance of the standard two-year drug therapy regimen provided through the local tuberculosis clinics. Savings of additional millions of dollars in hospital treatment resulted from this policy change; but more importantly, the chief beneficiaries were the patients who were returned to their families and their work much earlier. The shortened hospital stay of patients resulted in a low census in all five tuberculosis contract hospitals and, of course, increased operating costs per bed. The contract with Worcester County Hospital was voluntarily terminated, and that institution was converted to chronic disease care. The remaining four tuberculosis hospitals were reluctant to accept other than tubercular patients, as each wanted to be the final repository of tuberculosis care in the Commonwealth. Furthermore, each exerted substantial political support against termination of contract services. As a result, occupancy levels dropped to about forty-seven percent in the four hospitals.

In 1969, the Division of Tuberculosis Control prepared a position paper calling for the contracting for a specific, and annually declining, number of beds in each of the four sanatoria. This left the responsibility up to the hospital for utilizing the remaining beds for chronic disease care, or suffering the deficit. This proposal was put into practice and resulted in substantially reduced tuberculosis in-patient days over the next several years. The average length of stay for tubercular patients was reduced to about two months. At the same time, the tuberculosis sanatoria were able to gradually develop a new constituency, chronic disease care, which was increasingly in demand as a result of Medicare and Medicaid growth.

In 1969, the Division of Tuberculosis Control began, for the first time, to contract with general hospitals for the acute in-patient care and treatment of patients with tuberculosis. Contracts were written with Salem Hospital, Pittsfield General (Berkshire Medical Center), and Springfield Hospital (Baystate Medical Center), followed by seven more over the next few years. These hospitals provided short-term care for tuberculosis, in widely-scattered areas of the State, nearer to the homes of the patients served. The general hospitals also served to bring tuberculosis treatment back into the mainstream of medicine. A physician experienced in the treatment of tuberculosis, known as a ''Tuberculosis Consultant'' headed up each such in-patient program. Each program covered a large geographic region encompassing the areas covered by one or more tuberculosis clinics. Patient days were reduced significantly. Patients were moved into ambulatory care programs after an average length-of-stay of about twenty-five days. Patients with extensive disease and other complicating physical and social problems were referred to the remaining tuberculosis sanatoria. Western Massachusetts Hospital phased out its tuberculosis beds as the Pittsfield and Springfield Hospital programs developed.

By 1975, the Division had eight general hospitals under contract for short-term care of tuberculosis, along with the three remaining sanatoria for long-term tuberculosis care. In addition, ambulatory tuberculosis treatment contracts with some forty general hospitals had been developed to provide out-patient diagnostic and follow-up services to patients in all areas of the State.

A second position paper was prepared by the Division of Tuberculosis Control in 1975, calling for the final consolidation of all long-term care patients in one institution, Middlesex County Hospital. The following year saw an end to the old ''sanatoria systems,'' as the remaining tubercular patients in three wards in three separate hospitals were consolidated into one ward at Middlesex County Hospital, with Mattapan and Norfolk Hospitals phasing out their in-patient tuberculosis programs. Middlesex County Hospital was chosen because of its excellent facilities and the considerable expertise of its personnel and consulting staff. Also, Middlesex County Hospital operated the Massachusetts Tuberculosis Treatment Center for the court-ordered treatment of uncooperative patients, and was conducting programs for alcoholic patients. Shortly thereafter, a program was developed at the Hospital, under contract with the Division, for the ''resident care'' of patients with social and psychological illnesses affecting the treatment of their tuberculosis. Upon completion of in-patient care necessary for the patient's tuberculosis, he was transferred to the ''resident unit'' for his ambulatory follow-up drug treatment, rather than discharged home. The patient lived in the resident unit, walked to the hospital for meals and to the out-patient clinic, and took care of his room. The patient attended group and individual counseling sessions for alcoholism and other social and psychological problems. The experimental program had a low success rate, however, and was abandoned as not cost-effective. Many patients left the program before completion of therapy, and then failed to attend a tuberculosis clinic.

The program is being replaced by one which will use a ''mobile unit'' which will provide supervised chemotherapy for recalcitrant patients in their own neighborhoods, on the job, in a bar, or in the street. A nurse, van, and driver will deliver twice-weekly intermittent therapy to selected patients. Patients requiring x-ray, laboratory tests, or examination by a physician will be transported to an appropriate location.

In the fifteen years from 1963 to 1978, a planned program shifted care and treatment for tuberculosis from a long-term ''sanatoria'' care regimen to short-term hospitalization and ambulatory care. As a result, in-patient days dropped from some 265,000 in 1963 to less than 10,000 in 1978; and the average length of stay for new admissions was reduced from almost six months in a sanatorium to a little over two weeks in a general hospital.

Tuberculosis case and death rates during this period declined dramatically. Between 1959 and 1978, the national case rate dropped from 32.5 to 13.1 per 100,000 population. By comparison, the Massachusetts case rate, during the same period, declined from 30.4 to 10.0. The national tuberculosis death rate dropped from 6.5 in 1959 to 1.4 per 100,000 population in 1977. In the same period, the Massachusetts rate dropped from 6.8 to 0.9.

Unfortunately, the tuberculosis control movement which had peaked within a few years of the initial thrust of the Arden House Conference, began a gradual decline, to a near holding operation today. It had become apparent within a few years of the Conference that the Arden House intermediate goals were not going to be achieved within the projected time schedule. (More than two-thirds of the states failed to reach the goal of a case rate of 10 by 1970, and almost one-half of the states may not reach that level by 1980.) Evidence also began building that the major goal, the total eradication of tuberculosis, was not going to be achieved in this century. The failure to achieve the goals was a severe setback to tuberculosis control programs across the Country, and the goals were gradually abandoned. No effort has been made to readjust, amend, or replace them.

Without the target and the urgency of eradication, the tuberculosis control effort has lost much of its impetus in the past fifteen years. Little, if any, of the tremendous savings resulting from the transfer of patients from sanatoria care to short-term hospitalization and ambulatory treatment has been channeled into tuberculosis research or program development. Cities and states have been forced to cut back on their tuberculosis programs as inflation and new public health priorities surfaced. Federal aid to states for tuberculosis control is diminishing as newer, more visible public health problems emerge to take a larger share of shrinking health care dollars. Categorical grants to states for tuberculosis programs no longer exist. The National Tuberculosis Association, with a proud history of advocacy and service to the tuberculosis control movement, changed its name and shifted its major emphasis to other lung diseases. In 1978, it dropped tuberculosis to last place on its list of priorities. Medical schools and residency programs offer little in education and training related to tuberculosis, and many practicing physicians rarely raise the question in their physical and diagnostic examinations. A complacency about tuberculosis has developed among health workers, physicians, elected officials, and the public.

Since 1959, the national tuberculosis morbidity rate has shown a gradual and almost comfortable decline. The tuberculosis case rate of individual states and cities, however, varies greatly from the national rates. In 1977, 90 percent (or 27,143) of the new tuberculosis cases in the United States came from 25 states and the District of Columbia; whereas the other 25 states accounted for only 10 percent (or 3,002) of the cases. Nineteen states and the District of Columbia have regularly reported new tuberculosis case rates in excess of the rate for the Country over the past seven years (Table 1). In 1977, these 19 states and the District of Columbia, with 52 percent of the population, accounted for 66 percent of the cases in the United States.

The reported cases of tuberculosis indicate that the disease is gradually disappearing from the less populated states, and has been virtually eradicated from many rural and sparsely populated areas. Some endogenous cases will diminish rapidly as older generations die off and carry infection to the grave. Because of crowded conditions, poverty, malnutrition, immigration, and other problems of the city, transmission of new infection continues to occur at a much greater frequency in the large cities than in the less populated areas. The pool of infection is being replaced in part by new disease in the young, who will carry the infection through a long lifetime.

The concentration of cases in certain geographic areas is well documented by the report of cases by cities. Boston, and fifty-eight other large cities in the United States, with average annual totals of more than fifty cases, reported case rates well in excess of the national rates over the past seven years (Table 2). In 1977, these 59 cities accounted for 36 percent of all reported cases. Case rates for white and non-whites also show a wide variance. For the year 1977, the United States case rate for white females was 6.2 per 100,000 population as compared to 31.7 for non-white females; and 12.2 for white males as compared to a rate of 59.1 for non-white males.

The control of tuberculosis has, it seems, become dependent upon a passive policy of attrition rather than upon an aggressive assault on the disease. Although a vaccine with the effectiveness of those available for smallpox and poliomyelitis, or a miracle drug to produce total eradication, is lacking; physicians, health workers, and researchers do have the technology and the knowledge to reduce transmission to below endemic levels in all areas in the United States. Failure to overcome the present apathy and declining interest in tuberculosis, and the absence of an aggressive attack on the disease will result in the Country's carrying unnecessary infection, large dollar expenditures, and possibly primary drug resistance well beyond the year 2000.

The Massachusetts Department of Public Health recently conducted a survey among state and large city Tuberculosis Control Officers and among Massachusetts tuberculosis clinic physicians, to determine the value of convening an Arden House-type conference. Such a conference would review the current status of tuberculosis in the United States, and make recommendations for future policy and goal setting. Of the respondents (69 percent of those polled), 73 percent favored the convening of a national meeting to establish tuberculosis goals and objectives. For many reasons, we were unable to develop support for a national meeting; but with the support of the Center for Disease Control, the Massachusetts Health Officers Association, and others, we were able to bring this distinguished group together for the Tuberculosis Symposium.

Tuberculosis probably will disappear from the United States within the next fifty years or so, largely through the efforts of thousands of physicians, health officers, researchers, and other tuberculosis workers; but not before thousands fall victim to this illness. An effective policy on tuberculosis control could regenerate interest and set new directions to reduce substantially the time and expense needed to reach the point of eradication.

In closing, I would like to offer to this Symposium a quote from Dr. R. Y. Keers, of Great Britain, in his book, "Pulmonary Tuberculosis — A Journey Down the Centuries." Dr. Keers says: "Waksman and his successors have supplied the world with the weapons with which the eradication of tuberculosis can be accomplished. It would be but a poor return for their brilliance and their dedication if the world, through default, inertia, or political manoeuvring, were to prove itself incapable of using these weapons to the full."

TABLE 1

Nineteen States and the District of Columbia Having Tuberculosis Case Rates (Per 100,000 Population) Above the United States Rate, Ranked By Seven-year Average, 1971-1977, With the Number of Cases for 1977

		1971	1972	1973	1974	1975*	1976	1977	7-Year Average Rate	Number Of Cases 1977
Rank	United States	17.1	15.8	14.8	14.2	15.9	15.0	13.9	15.2	30,145
1.	Hawaii	41.6	38.9	36.4	43.0	68.3	75.0	65.3	52.6	584
2.	Dist. of Columbia	43.6	47.3	41.2	48.5	53.4	45.4	49.6	47.0	342
3.	Alaska	33.5	24.6	30.3	30.0	21.0	23.0	22.6	26.4	92
4.	Alabama	28.3	26.2	22.3	21.9	21.6	22.5	19.1	23.1	704
5.	South Carolina	25.5	24.4	22.7	23.0	22.2	20.7	22.4	22.9	643
6.	Tennessee	22.0	23.0	21.5	20.7	24.7	21.4	20.1	21.9	864
7.	Arkansas	24.8	21.9	22.6	19.6	23.7	21.1	18.3	21.7	392
8.	Maryland	21.0	20.7	17.7	20.8	25.3	22.3	20.0	21.1	827
9.	Texas	23.8	20.8	18.9	19.2	21.2	19.7	18.1	20.2	2,326
10.	Florida	22.0	20.9	19.4	18.0	21.0	19.4	19.8	20.07	1,674
11.	Kentucky	23.0	21.7	20.2	18.4	18.9	17.1	20.8	20.01	719
12.	North Carolina	20.3	19.1	18.5	17.3	21.4	22.3	18.9	19.6	1,042
13.	Georgia	20.9	19.0	21.1	19.5	20.9	16.6	18.1	19.4	916
14.	Arizona	24.8	20.4	20.2	16.2	19.0	17.8	15.6	19.1	358
15.	Mississippi	19.4	17.7	19.5	17.0	16.6	18.4	19.3	18.2	460
16.	New York	20.4	18.8	17.0	15.8	21.7	17.0	(13.6)†	17.7	2,434
17.	Virginia	19.3	17.1	17.4	16.3	18.3	16.3	(14.4)	17.0	742
18.	California	17.2	16.2	15.6	15.7	17.1	16.8	15.8	16.3	3,465
19.	New Mexico	(16.7)	18.2	20.0	17.4	(12.7)	15.5	(12.8)	16.1	152
20.	New Jersey	17.8	16.4	(14.6)	(13.8)	17.4	16.4	15.9	16.0	1,162

Total Number of Tuberculosis Cases in These 19 States And the District of Columbia in 1977	19,898
Percent of Total of Cases in the United States for 1977	66%
Percent of U.S. Population in These States and D.C.	52%

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* Beginning in 1975, reactivated cases of tuberculosis were reported with newly discovered cases, due to a change in reporting of tuberculosis.

† Rate below national rate for that year shown in parentheses.

Source: Tuberculosis Statistics[1]

TABLE 2

Fifty-nine Cities* Having Tuberculosis Case Rates (per 100,000 population) Above the United States Rate, Ranked by Seven-year Average, 1971-1977, With the Number of Cases for 1977.

United States and Cities With Population	1971	1972	1973	1974	1975†	1976	1977	7-Yr. Avg. Rate	No. of Cases 1977
United States	17.1	15.8	14.8	14.2	15.9	15.0	13.9	15.2	30,145
Honolulu, HI 356,500	58.2	57.8	49.9	63.4	103.2	113.3	94.8	77.2	334
Newark, NJ 423,800	70.0	69.6	58.0	44.2	66.3	54.7	59.3	60.3	196
Stockton, CA 127,300	79.5	42.8	48.2	50.6	64.8	54.9	42.6	54.7	52
Baltimore, MD 788,900	51.3	48.2	38.5	54.6	70.6	50.1	47.7	51.5	391
Paterson, NJ 157,000	68.3	58.5	41.3	45.8	64.4	40.0	38.5	50.9	53
Trenton, NJ 116,000	63.0	44.1	33.9	49.7	43.1	48.7	49.3	47.4	49
San Francisco, CA 658,700	44.1	42.2	44.2	45.1	45.0	48.9	41.3	44.4	274
Columbia, SC 117,800	-	23.9	22.7	47.6	48.4	52.4	45.4	40.0	53
Birmingham, AL 270,000	45.3	41.1	33.7	38.7	35.0	35.2	43.2	38.8	118
Detroit, MI 1,335,100	41.0	37.7	35.8	33.6	40.1	40.6	37.3	38.0	498
Richmond, VA 224,200	42.8	44.3	33.0	33.9	38.6	33.5	35.8	37.4	81
Jersey City, NJ 227,900	37.6	36.4	31.4	31.1	44.7	39.0	40.4	37.2	96
Ft. Lauderdale, FL 166,300	-	35.3	21.1	25.6	57.9	33.3	44.3	36.2	74
Boston, MA 618,300	46.6	41.8	38.9	34.4	32.4	29.8	29.2	36.1	186
Tampa, FL 294,900	27.7	25.4	33.5	40.7	36.7	45.6	34.6	34.8	102
Atlanta - Fulton Co., GA 566,600	30.8	31.2	34.4	35.6	34.5	30.5	38.6	33.6	228
El Paso, TX 381,300	37.8	39.0	35.3	38.9	30.2	19.7	29.9	32.9	108
Savannah, Chatham Co., GA 190,100	26.6	28.9	36.3	38.4	39.1	30.6	29.3	32.7	54
Montgomery - Montgomery Co., AL, 189,900	37.0	40.6	28.1	28.1	41.3	27.5	23.4	32.2	39
Philadelphia, PA 1,787,100	41.2	37.3	34.5	31.0	26.8	29.5	22.7	31.86	412

Table 2 (Cont.)

United States and Cities With Population	1971	1972	1973	1974	1975†	1976	1977	7-Yr. Avg. Rate	No. of Cases 1977
Houston, TX 1,782,100	42.4	34.3	27.7	26.9	29.1	34.2	28.0	31.80	445
Fresno, CA 194,800	40.6	44.3	28.1	29.3	22.2	29.2	28.4	31.7	53
Chicago, IL 3,367,000	41.1	37.7	26.7	25.8	20,8	27.9	32.0	30.2	1,079
Gary, IN 182,500	42.8	29.3	34.9	34.2	28.4	18.9	20.4	29.8	37
Lexington - Fayette Co., KY 189,900		25.9	26.0	32.2	34.7	29.5	29.6	29.6	55
Cincinnati, OH 397,300	42.4	28.5	27.2	26.2	29.9	24.0	28.6	29.5	115
Sacramento - Sacram. Co., CA 738,500	31.7	35.4	37.5	15.5	17.5	33.8	34.7	29.4	91
Nashville - Davidson, Co., TN 460,000	25.9	24.3	23.8	30.9	38.4	32.4	27.0	28.9	125
Los Angeles, CA 2,787,900	29.9	28.1	30.2	26.2	29.1	30.7	27.6	28.8	761
Cleveland, OH 619,200	32.9	33.6	30.6	30.6	23.2	27.4	22.4	28.6	139
New York, NY 7,614,000	32.6	28.8	26.6	25.6	36.6	28.6	21.1	28.5	1,605
Chattanooga - Hamilton Co. TN, 277,100	38.6	32.8	34.1	19.3	23.8	24.3	21.4	27.7	57
Dayton, OH 194,700	26.3	25.0	28.9	33.4	38.1	15.3	23.8	27.2	47
Mobile - Mobile Co., AL 346,700	30.5	32.7	33.0	28.6	21.3	25.4	14.4	26.5	46
New Orleans, LA 559,200	35.5	21.9	19.0	21.6	28.0	31.3	26.4	26.4	148
Buffalo, NY 388,600	31.6	31.3	29.3	22.7	26.3	22.1	20.1	26.2	80
Dallas, TX 915,300	25.7	20.0	23.0	26.3	32.1	28.4	25.7	25.8	229
Rochester, NY 255,100	25.0	30.3	31.8	22.3	22.6	25.6	20.8	25.4	54
Jacksonville, FL 575,200	30.6	27.4	22.7	20.7	28.4	26.1	21.8	25.3	126
Pittsburgh, PA 443,000	26.5	31.7	30.0	22.1	20.5	20.1	16.6	23.9	80
San Antonio, TX 754,800	29.3	25.3	18.1	20.8	26.2	25.3	19.9	23.5	143
St. Louis, MO 516,300	38.4	25.5	21.3	18.8	16.3	17.2	21.5	22.7	111

Table 2 (Cont.)

United States and Cities With Population	1971	1972	1973	1974	1975†	1976	1977	7-Yr. Avg. Rate	No. of Cases 1977
Miami - Dade Co., FL 1,472,000	24.0	21.1	21.0	22.7	24.3	23.4	19.3	22.2	278
Oakland, CA 327,800	28.5	26.2	26.6	(12.3)	-	17.4	22.5	22.2	76
Austin, TX 372,600	19.1	25.3	18.1	20.8	26.2	25.3	19.9	22.1	53
Ft. Worth, TX 453,000	22.8	22.3	17.1	20.0	29.1	17.5	23.4	21.7	101
Knoxville - Knox Co., TN 303,800	28.6	24.6	18.6	18.9	21.3	19.2	20.5	21.6	62
Seattle, WA 490,000	22.5	20.2	23.3	23.1	18.9	20.3	21.6	21.4	109
Tucson, AZ 307,100	27.8	21.1	17.3	17.2	23.8	22.1	16.7	20.8	51
Portland, OR 366,700	22.6	16.8	20.7	19.1	17.3	23.6	21.1	20.1	81
Indianapolis - Marion Co., IN 785,700	23.7	26.7	23.0	19.4	18.1	(11.9)	17.3	20.0	135
Charlotte - Mecklenburg Co., NC, 401,700	(14.5)	(14.2)	16.3	21.2	27.8	21.7	19.6	19.3	77
Kansas City, MO 458,300	20.5	17.3	17.9	22.4	21.6	17.9	(11.4)	18.4	54
Memphis - Shelby Co., TN 761,800	18.1	17.5	15.1	15.8	16.3	17.5	19.6	17.3	150
Phoenix, AR 711,600	22.2	17.5	16.4	(11.6)	18.6	16.9	15.9	17.0	113
San Diego, CA 797,400	(16.7)	(15.3)	14.9	16.0	(15.3)	19.9	20.7	16.9	165
Norfolk, VA 285,900	22.9	(14.6)	15.9	16.2	(15.6)	(14.7)	17.8	16.8	49
Long Beach, CA 344,200	(14.5)	(13.7)	(13.3)	19.2	19.7	18.8	15.5	16.3	53
Louisville - Jefferson Co., KY 681,000	20.1	16.2	15.5	14.8	(12.7)	(14.3)	16.2	15.6	113

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* Cities over 100,000 population with average of 50 or more cases annually, and 1978 estimated population. Source: Tuberculosis Statistics, Center for Disease Control.

† Beginning in 1975, reactivated cases of tuberculosis were counted with newly discovered cases, due to a change in reporting of tuberculosis.

City rates below the United States rate for the same year are shown in parentheses.

APPENDIX C

A SYMPOSIUM TO EXAMINE FUNDAMENTAL CONCEPTS AND BASIC ISSUES IN THE CONTROL AND ERADICATION OF TUBERCULOSIS; AND TO DEVELOP GOALS, OBJECTIVES, AND NEW STRATEGIES FOR THE COMMONWEALTH OF MASSACHUSETTS AS A MODEL FOR OTHER STATES

Sponsored by:

Massachusetts Department of Public Health
600 Washington Street
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Tuberculosis Control Division
Bureau of State Services
Center for Disease Control
Atlanta, Georgia 30333

I. Background

The Tuberculosis Control Movement may be losing its momentum and is in danger of stalling, because of a lack of direction — a failure to identify the next essential steps needed to eliminate transmission and reduce the incidence of disease to low or subendemic levels. Meanwhile, tuberculosis continues as a sizable and costly problem, particularly in the states with large urban populations. In 1977, 25 states and the District of Columbia accounted for 27,143, or 90 percent, of all the reported cases of tuberculosis in the United States; and just 44 cities produced 10,215, or 34 percent, of the Nation's total. Sixteen states and the District of Columbia have had morbidity rates higher than the national rate every year from 1971 to 1977; one state had a higher rate in six of the years, and another state exceeded the national rate in five of the seven years. In 1977, 13 states and the District of Columbia reported an increase in their tuberculosis rates over 1976. Furthermore, although 25 states, combined, accounted for only 10 percent of the United States' total cases in 1977; no state is without tuberculosis nor is likely to be free of the disease for many years.

The incidence of tuberculosis remains at an unacceptably high level in Massachusetts. The 1978 incidence rate of 10.0 cases per 100,000 population, and the occurrence of 22 cases of disease in children under age 15 indicate that the transmission and development of tuberculosis continues in the Commonwealth. Boston, with a case rate of 26.7 per 100,000 population, accounted for 170 cases, or 29.3 percent of the 580 cases counted in 1978 in Massachusetts.

In spite of a statewide network of treatment facilities that provide access to care to every resident of Massachusetts, nearly 600 cases of disease occurred in the Commonwealth in 1978. There are still nearly 1,300 persons with records in the tuberculosis case register, with over 1,000 of these at home with a recommendation for treatment with two or more drugs. In 1977, 50 persons died of tuberculosis in Massachusetts.

The Arden House Conference in 1959 set the stage for major changes in the treatment and control of tuberculosis, including goals and standards for the total eradication of the disease.[1] Following, on the strength of the Conference, many tuberculosis programs in the country were reorganized; sanatoria were closed; and the treatment of patients moved into general hospitals and ambulatory care programs. The savings to the Commonwealth of Massachusetts and the Nation in hospital costs were in the hundreds of millions of dollars; and the savings in human suffering to patients and their families were incalculable. Tuberculosis case and death rates dropped. The Country had reached a milestone in the control of tuberculosis as important as those which occurred with the isolation of patients in sanatoria in the first quarter of the century, and with the introduction of chemotherapy in the 1940's.

Unfortunately, the tuberculosis control movement peaked within a few years of the initial thrust of the Arden House Conference, and began a gradual decline to a near holding operation today. It had become apparent within a few years of the Conference that the Arden House inspired goals were not going to be achieved within the projected time frame. Furthermore, evidence began building that the major goal of the Arden House Conference, the total eradication of tuberculosis, was not going to be achieved in this century. The tuberculosis program in Massachusetts suffered a severe setback, as the goals were gradually abandoned. Regrettably, no effort was made to readjust, amend, or replace the goals.

In recent years, without the target and the urgency of eradication, the tuberculosis control programs in many areas have lost vitality. Little or none of the tremendous savings resulting from the transfer of sanatoria patients to short-term hospitalization and ambulatory care has been channeled back into tuberculosis research or program development. Some cities and states have made critical cuts in their tuberculosis programs. Today, medical schools and residency programs offer little in education and training related to tuberculosis, and the physical and diagnostic examination of many practicing physicians scarcely raises the question. The American Lung Association, formerly the National Tuberculosis Association, with a proud history of advocacy and service to the tuberculosis control movement, has changed its emphasis to other lung diseases; and in 1978, dropped tuberculosis to last place on its priority list. A complacency about tuberculosis has developed among physicians, health workers, elected officials, and the public.

The tuberculosis control movement is sorely in need of new directions, or the Commonwealth may face an increasing number of new cases requiring the excessive and unnecessary annual expenditure of hundreds of thousands of dollars into the next century.

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1. A report to the Arden House Conference on Tuberculosis, November 29 to December 2, 1959; "Tuberculosis Control: The Big Push Ahead — Treatment Is The Tool."

II. Proposal for Symposium

A symposium will be convened in Boston, Massachusetts in November, 1979, to examine the fundamental concepts and basic issues in the control and eradication of tuberculosis; and to develop goals, objectives, and new strategies for the Commonwealth of Massachusetts which can serve as a model for other states and developed countries. The symposium will bring together medical and public health experts from the United States and abroad, under the joint sponsorship of the Massachusetts Department of Public Health and the Center for Disease Control, United States Department of Health, Education, and Welfare. The symposium will be concerned with all aspects of the tuberculosis problem; including, but not limited to, program development, research, immigration and migration, treatment compliance, alcoholism, housing, and any other area impacting on tuberculosis. Recommendations of the meeting will be available and distributed widely.

A mechanism for a periodic review and update of the recommendations, at periodic intervals over the next decade, will be the responsibility of the membership.

Some of the funding for the symposium is being requested from lung associations, independent voluntary tuberculosis associations, and other agencies concerned with tuberculosis control and public health. The Massachusetts Health Officers Association, Inc. has agreed to receive funds from contributing agencies, and to disburse funds at the request of the Tuberculosis Symposium Planning Committee.

The need for such a meeting received strong support and endorsement from state and big city Tuberculosis Control Officers and Massachusetts tuberculosis clinic physicians, in a survey by the Division of Tuberculosis Control, Massachusetts Department of Public Health.[2]

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2. A report of a survey of state and big city Tuberculosis Control Officers and Massachusetts tuberculosis clinic physicians, regarding the need for a conference on tuberculosis; and letters to the participants.

TUBERCULOSIS SYMPOSIUM MAKEUP

The Tuberculosis Symposium will consist of three parts:

1. Planning Committee
2. Tuberculosis Symposium
3. Tuberculosis Symposium Report

1. **Planning Committee:** Three representatives of the Center for Disease Control and three from the Massachusetts Department of Public Health, with one at-large member elected jointly by both parties. The Committee will be named on or before May 10, 1979. The Planning Committee will appoint a Symposium Committee with technical consultants, on the advice and assistance of appropriate medical, public health, and other professional agencies and organizations. The Planning Committee will, upon completion of the symposium, be succeeded by an *ad hoc* committee appointed by the Commissioner of the Massachusetts Department of Public Health and the Director of the Tuberculosis Control Division, Bureau of State Services, Center for Disease Control, Department of Health, Education, and Welfare. The Committee will assess implementation of the recommendations of the symposium and will periodically review and update the goals, objectives, and action plans for the control of tuberculosis in Massachusetts.

2. **Tuberculosis Symposium Committee:** Co-chaired by the Director of the Tuberculosis Control Division, Center for Disease Control, and the Director of the Division of Tuberculosis Control of the Massachusetts Department of Public Health; and consisting of experts in medicine and public health, and some technical experts in other appropriate disciplines. A Tuberculosis Symposium moderator will be appointed by the Planning Committee.

3. **Tuberculosis Symposium Report:** A report of the proceedings and recommendations of the symposium will be available and distributed widely by The Massachusetts Department of Public Health, following the close of the meeting, but no later than December 1, 1980.

MEETING LOCATION AND DATE

A three and one-half (3½) day meeting of the Symposium Committee will be held at the Hotel Lenox in Copley Square, Boston, Massachusetts, November 27-30, 1979. The committee will meet Tuesday through Thursday to debate the issues, develop goals, objectives, and methods of implementation; with a half-day on Friday to summarize the meeting and make recommendations. The technical consultants will join the symposium on Wednesday and/or Thursday to offer technical advice to the Committee.

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